if wood stoves are incorrectly operated, these values can be up to 10 times higher. Despite Sydney's mild winters (average daily maximum temperature: 17.2°C), a family wood heater often creates more pollution than 100 family cars. In the United States, carbon monoxide emissions from wood heaters, as well as particles, can be a serious problem.[6]

In California, 40% of vehicle nitrogen oxides and 60% of particulates arise from 4% of vehicles powered by diesel fuel.[7] California already has stricter diesel fuel regulations than other US states. Identification of particulate emissions from diesel-fueled engines as a toxic air contaminant[7,8] should ensure that this major source continues to be targeted. In contrast, in New South Wales, the main proposal for diesel fuel, the source of 80% of vehicle particulates, is updating emission standards to current US and European requirements.[1]

Morgan notes the dangers of nitrogen oxides, for which at least 99% of person-exposure hours above 0.16 ppm (exposure units) in New South Wales are from indoor sources.[9] Reducing exposure units by replacing unflued gas heaters would cost a mere $0.50 per exposure unit, as compared with $3000 for vehicle catalyst controls.[9] Though emission limits have been reduced, new unflued gas heaters continue to be installed in New South Wales. Their users (possibly unaware of the health data) are likely to experience many times the nitrogen dioxide exposure from heating than from traffic.

In Sydney's Woronara Valley, 18% of residents used solid fuel as their main form of heating, but 36% considered wood smoke a problem.[3] Visionary urban planning must pay attention to all forms of pollution in proportion to the amounts produced and the costs and benefits of alternatives. The current absence of controls on wood smoke, a major pollution source, may encourage people to seek cleaner air through low-density housing, negating other efforts to decrease urban sprawl and car dependency. □

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Occasional Smoking in a Study of Premenopausal Women

We read with interest the article by Husten et al.[1] describing characteristics of intermittent ("not daily") smokers. We also have data about occasional smokers from a study of 411 premenopausal women who were members of a Northern California health maintenance organization.[2] The women completed a baseline telephone interview that included questions about usual smoking and also completed a diary in which they recorded number of cigarettes smoked each day (mean participation = 141 days). Twenty-five women who defined themselves as non- or ex-smokers at baseline recorded smoking in the diary (Table 1). From the diary, the mean number of cigarettes smoked per day was calculated, and women were defined as nonsmokers (no cigarettes during diary recording), occasional smokers (<1 cigarette per day on average), or regular smokers (≥1 cigarette per day on average).

Of the 63 women who recorded in the diary any smoking, 33% were occasional smokers. This is higher than reported by previous studies,[1,3–5] which defined subjects as daily vs not daily smokers. (By this definition, 59% of the smokers in our study would be defined as "not daily".) In our study, occasional smokers were more likely to be college graduates and have higher incomes than regular smokers; however, we did not observe differences by age or race/ethnicity.

In addition, study subjects collected daily urine samples. We selected up to 3 pooled samples (5 days each) from 407 women to measure the concentration of cotinine, a nicotine metabolite, by using gas chromatography mass spectrometry[6] with a detection limit of 0.20 ng/mL. We compared average cotinine levels to average number of cigarettes per day (Table 1). All of the regular smokers had cotinine levels greater than 25 ng/mL, while none of the nonsmokers had cotinine levels this high (82% were <1 ng/mL). However, the occasional smokers had considerable overlap with both the nonsmokers and the regular smokers, which may be due to the timing of the urine sam-

TABLE 1—Smoking Reported in Daily Diary Compared to Smoking Reported at Baseline Interview and to Urine Cotinine Levels in a Study of Premenopausal Women: Northern California

	Diary Smoking Status		
	Nonsmoker (0 cigarettes/day) No. (%)	Occasional Smoker (<1 cigarette/day) No. (%)	Regular Smoker (≥1 cigarette/day) No. (%)
Baseline interview			
Nonsmoker	276 (79)	11 (52)	1 (2)
Ex-smoker	72 (21)	10 (48)	3 (7)
Current smoker	0 (0)	0 (0)	38 (90)
Urine cotinine level[a]			
<1 ng/mL	282 (82)	5 (24)	0 (0)
1–24.9 ng/mL	63 (18)	10 (48)	0 (0)
≥25 ng/mL	0 (0)	6 (29)	41 (100)

[a]Four women did not have urine cotinine measured.

ples with respect to the actual consumption of cigarettes by these smokers.

We recommend that, when possible, researchers include a daily smoking diary in study protocols and/or include questions to determine which study subjects are occasional smokers (<1 cigarette/day on average) and/or are intermittent ("not daily") smokers. Identifying occasional smokers, especially for studies that include a tobacco biomarker, is important to learn more about this group of tobacco consumers and to minimize misclassification. □

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Husten and Giovino Respond

We read with interest the letter from Elkin et al. regarding their data on 411 premenopausal women in a northern California HMO. We agree with the authors that the explicit assessment of nondaily smoking is important for understanding this group of tobacco users and minimizing misclassification. It is difficult, however to comment further on the Elkin data because several important pieces of information are missing. Most important, the Elkin study assessed what they define as "occasional" smoking (smoking <1 cigarette per day on average), whereas our data[1] and others'[2–5] assessed nondaily smoking. It would be useful if the Elkin data were analyzed using the same definition of nondaily smoking as these other studies. In addition, the questions used at baseline to determine usual smoking are not defined, so it is difficult to assess comparability to questions used in national surveys. Also, the duration of time from the baseline questionnaire to the beginning of the diary and how many days the diary was kept are not reported. We also do not believe that a diary is necessarily the best method for assessing smoking behavior. Merely keeping a diary may change smoking behavior, and participants may not record all cigarettes smoked. Finally, the purpose of the study is not identified, so it is difficult to determine if nondaily smokers would be more likely than daily smokers to enter the study.

It should be noted that our study provided a report of persons who stated that they had never smoked daily—it was not an estimate of current nondaily smoking behavior. The estimates of nondaily smoking obtained in the Elkin study are much higher, however, than those obtained through other surveys.[2–5] In a nationally representative sample, 19% of smokers were nondaily smokers in 1995[5]; 15% were nondaily smokers in a 1990 study in California.[2] Also, because the racial/ethnic and age composition of the women is not defined, it is difficult to assess the importance of the finding of no racial/ethnic or age differences among nondaily smokers. These findings may be a result of the small number of occasional smokers (21) in the Elkin study. Furthermore, if there were a significant proportion of Hispanic or Asian women in their population, this could also explain the higher percentage of nondaily smokers: nationally, 36% of Hispanic smokers, 33% of Asian smokers, and 26% of African American smokers are nondaily smokers, compared with 15% of White non-Hispanic smokers.[6] Further research is necessary to address these issues. □

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Household Firearms

Powell and colleagues recently reported valuable data regarding guns in households in 22 states.[1] These data were collected by the Behavioral Risk Factor Surveillance System. The authors commented that variations in how questions were asked could account for some of the differences in reported prevalences. We offer some evidence that this can occur.

From 1992 through 1994, the Washington State Department of Health Behavioral Risk Factor Surveillance System asked respondents,"Do you keep a loaded gun in your house?" In each of these years, it was estimated that 15% of adults lived in a household with a loaded firearm. In 1995, questions were revised: "The questions that follow are about safety and firearms. Firearms include pistols, shotguns, rifles, and other types of guns. Do not include guns that cannot fire, starter pistols, pellet or BB guns. Are any firearms now kept in or around your home? Include those kept in your home, in a garage, outdoor storage area, truck or car." Persons who said they had a firearm were